

Message

From: Dan Pope [DPope@css-inc.com]
Sent: 3/3/2017 2:26:14 PM
To: d'Almeida, Carolyn K. [dAlmeida.Carolyn@epa.gov]; Davis, Eva [Davis.Eva@epa.gov]; Wayne Miller [Miller.Wayne@azdeq.gov]
CC: Henning, Loren [Henning.Loren@epa.gov]; Fairbanks, Brianna [Fairbanks.Brianna@epa.gov]
Subject: RE: 2017-3-1 - Williams AFB - Agencies response to PMook Feb 10 - USAF moving EBR forward - ST012 -

I think that's a good idea. The letter could have these two things:

- 1) Scott's documentation of a site where high sulfate injections/sulfide production not only made the situation worse, but also was toxic to the microorganisms long term, and
- 2) a request to AF for documentation of a site (similar to WAFB, with masses of petroleum LNAPL and large quantities of high-concentration sulfate injected) where their proposed approach actually depleted LNAPL and reduced COCs to 500-600 ug/L (which is the concentration where they want to switch to MNA)

From: d'Almeida, Carolyn K. [mailto:dAlmeida.Carolyn@epa.gov]
Sent: Thursday, March 02, 2017 3:29 PM
To: Dan Pope; Davis, Eva; Wayne Miller
Cc: Henning, Loren; Fairbanks, Brianna
Subject: RE: 2017-3-1 - Williams AFB - Agencies response to PMook Feb 10 - USAF moving EBR forward - ST012 -

This is an issue that hasn't really been raised before, would be helpful to have a memo on this or at least add a comment to the letter and attach documentation.

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"Because a waste is a terrible thing to mind..."

From: Dan Pope [mailto:DPope@css-inc.com]
Sent: Thursday, March 2, 2017 9:13 AM
To: Davis, Eva <Davis.Eva@epa.gov>; d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>; Wayne Miller <Miller.Wayne@azdeq.gov>
Cc: Henning, Loren <Henning.Loren@epa.gov>; Fairbanks, Brianna <Fairbanks.Brianna@epa.gov>
Subject: RE: 2017-3-1 - Williams AFB - Agencies response to PMook Feb 10 - USAF moving EBR forward - ST012 -

It would be great to get Scott to provide some documentation (case studies, etc. to show actual field experience with this) to show AF (and enter into the record) where sulfide production due to high sulfate injections has shut down field-scale biodegradation and had long-term inhibitory effects on biodegradation of BTEX. That would be very strong evidence, I think, and could serve as the basis to require a radical redesign of the AF EBR effort, and perhaps even put EBR aside until the LNAPL source issue is resolved satisfactorily.

From: Davis, Eva [mailto:Davis.Eva@epa.gov]
Sent: Wednesday, March 01, 2017 3:36 PM

To: d'Almeida, Carolyn K.; Wayne Miller

Cc: Henning, Loren; Fairbanks, Brianna; Dan Pope

Subject: RE: 2017-3-1 - Williams AFB - Agencies response to PMook Feb 10 - USAF moving EBR forward - ST012 -

It was pointed out to me by Scott Huling, who was one of those that did the mass estimate for this site years ago, that if we let them proceed with the injection of a large amount of sulfate, as they want to do, it will not only make the situation worse, but sulfide production could really poison the ability of the bugs to work in the future. Dan came by here briefly a little bit ago, and we briefly threw out there the concept of doing a pilot scale on the fringes to get biodegradation rate information, that then could be used for an improved model. That would feed into an FFS. Potential problem still in how well you can estimate rates from the test – but a better designed test could give us useful information, that they did not get from the push-pull test they did.

I would like to review the letter again, still thinking about what needs to be included. I think more needs to be said about some of the other differences between the work plan and addendum 2 -

From: d'Almeida, Carolyn K.

Sent: Wednesday, March 01, 2017 3:16 PM

To: Wayne Miller <Miller.Wayne@azdeq.gov>

Cc: Henning, Loren <Henning.Loren@epa.gov>; Davis, Eva <Davis.Eva@epa.gov>; Fairbanks, Brianna <Fairbanks.Brianna@epa.gov>

Subject: RE: 2017-3-1 - Williams AFB - Agencies response to PMook Feb 10 - USAF moving EBR forward - ST012 -

Great questions Wayne. This will be a technically dense dispute if we go forward for sure; management will become experts in SEE and EBR before we are done. We could go to formal dispute now on the basis that the criteria specified in the RDRA workplan for termination of SEE/EBR transition were not met. The bottom line for me, is that we end up with a concrete *enforceable* work plan whichever route we go. We don't have that right now with the vague piecemeal effort currently described. This letter we are sending now is to request what would need to be included in a work plan where we could potentially reach an agreement. Hopefully we can get into the technical weeds without invoking formal dispute. But there has to be an exit strategy to go back to SEE if EBR is not working. Based upon Phil's statements at the BCT it pretty much confirmed for me that they hope the EBR plan is really a defacto way to achieve the effect of a TI waiver. That is what we will have if we don't get this clarified first. Some responses below in red

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"Because a waste is a terrible thing to mind..."

From: Wayne Miller [<mailto:Miller.Wayne@azdeq.gov>]

Sent: Wednesday, March 1, 2017 11:55 AM

To: d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>

Cc: steve <steve@uxopro.com>

Subject: 2017-3-1 - Williams AFB - Agencies response to PMook Feb 10 - USAF moving EBR forward - ST012 -

Kudos to you, Eva, and Dan for all the EBR research and discussion. I understand that the gathered information is dispute support. There just seems to be an overwhelming info quantity if the intent is to prepare a brief, succinct, upper management response letter to Phil Mook.

I received some pointed questions:

- Given that USAF is striking forward with EBR, will a Formal dispute help or hinder? As I said, hopefully we can have a technical discussion without invoking dispute.
- Will ST012 follow a similar long path with months going by and no clear action? A point has been raised that taking the Site SS017 dispute as an example, even though the dispute appears to have gone to the regulators, the process is long and still not actually official. I am afraid if EBR is implemented we will have an even longer path with many years going by and no clear progress, no means to validate claims of progress or change course. We would likely end up in dispute, 20 years down the line when the ROD criteria is not met. But if we take a significant time in dispute now, the need for containment may at least become clear, and could be a game changer for AF.
- Can the EPA's gathered sulfate and EBR knowledge be used to guide the USAF into supporting an integrated, and much longer duration, active Remedial Activity process? We need a more realistic estimate of timeframe anticipated to achieve MCLs; then the question becomes, if much longer than the 20 years stated in the ROD, does this warrant a ROD amendment?
- Can EPA move the info into a Tech Memo (developed by you, Eva, and Dan) which can be entered into the administrative record as Exhibit A showing that the USAF must do more? We've written several letters already basically saying the same things.
- Does the RDRA Work Plan or would an EPA Tech Memo consider, and detail, integrated and continuous SVE, low volume NAPL Product pumping (slurping), EBR, etc. program moving forward? They haven't offered continuous product pumping; and we asked for containment which they are not agreeing to provide.

Please note I am not advocating for the USAF, I am relaying questions I have received.

Whether AMEC is released, or retained for an extended Performance Period, really won't matter. Your EPA work documents that USAF and whichever contractor USAF retains will need to embrace that the site ST012 will require long-term active remediation to restore the aquifer. Precisely why there must be very specific criteria for remedy performance monitoring and milestone decision making going forward, so the work could be assumed by a new contractor. They have not provided us this and have not even done adequate characterization to develop this.

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